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ABSTRACT

One of a series of papers resulting from a Fund for the Improvement of Postsecondary Education (FIPSE) project, this working paper describes how a state agency data system can be used and supplemented to produce the kinds of data that are needed for effective community college planning and evaluation. First, general information is presented on efforts to design, develop, and add a planning and evaluation component to the existing California State Chancellor's Information System. This section provides information on the current system and three specific information sets to be produced (i.e., quantitiative, qualitative, and external). Next, six areas in which the FIPSE project is working to create analytical models are discussed: (1) learner outcomes, including proposals to add partial longitudinal capability to the existing student data file and the use of cross-section community surveys assessing the value of community college education; (2) comparative data for college evaluation and accreditation; (3) projected needs and programs; (4) statewide priorities for community college operations against which evaluations and planning can be conducted; (5) census data application to the evaluation of statewide priorities, comparative analyses by colleges, and projections of student demand; and (6) other data sources, such as the Statewide Longitudinal Survey, the Student Resources Surveys, and the Student Economics and Resources Survey. An information system plan proposed to the Board of Governors of the California Community Colleges is appended. (HB)

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Other Reports and Papers:

- College Planning: Strategies for Staff Assessment of the Environment
- Census Users Manual
- Report on Learner Outcomes Symposium
- Working Papers on the FIPSE Project:

  #4 Delineation of Responsibilities
  #5,6,7 Planning and Accreditation: A Survey of Attitudes of Policy-makers
  #9 Evaluating Statewide Priorities
  #10 Measuring Community College Outcomes: The State-of-the-Art

from the project on

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jointly sponsored by the

Chancellor's Office, California Community Colleges
and
Western Association Accrediting Commission for Community and Junior Colleges

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WORKING PAPER NO. EIGHT

# INFORMATION SYSTEM SUPPORT

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WORKING PAPER EIGHT

# INFORMATION SYSTEM SUPPORT

## PREFACE

This working paper on Information Systems Support is one of a series of papers resulting from a three-year project to improve evaluation and planning in community colleges. The project is sponsored jointly by the Chancellor's Office of the California Community Colleges and by the Western Association Accrediting Commission for Community and Junior Colleges. Project work is concentrated in California and Hawaii, the jurisdiction of the Western Accrediting Commission. Support for the project is provided by community colleges in these states, the two sponsoring aggencies, and by the federal Fund for Improvement of Postsecondary Education (FIPSE).

Project objectives include developing a clear statement of the responsibilities for evaluation and planning that are appropriate for state control agencies, accrediting commissions, and for local community colleges. Tensions about the appropriate division of these responsibilities exist throughout the country. A long tradition of cooperation in California and Hawaii, however, has created a most congenial atmosphere in which to analyze and clarify the proper delineation of roles.

Project staff also are developing a series of tools to improve the state-of-the art of evaluation and planning for community colleges. Beginning in the Fall 1982, these tools have been introduced, used and assessed in a dozen workshops, self-study seminars, symposia, and problem-solving sessions conducted in California and Hawaii. These activities will continue through the Fall of 1984. While project work is being concentrated in the two states, it should be possible to generalize the results to virtually any community college operation or governance structure in the country.

This working paper was written early in the project to describe how a state agency data system (in this case, California) can be used and supplemented to improve planning and evaluation for community colleges. Most such data systems are large-scale and cross-section in character. While possibly useful for policy analysis, these data do not automatically generate the kinds of comparative data, projections, longitudinal data, and qualitative assessments that are needed for effective planning and evaluation.

Several approaches to developing useful information are suggested: first, using existing data for comparative analysis; second, gathering new information, often qualitative, from the colleges; and, finally, collecting relevant information from sources external to the college. To accomplish this work, six specific project efforts have been identified and undertaken. These efforts have resulted in a series of activities and products that are contributing in a significant way to one of the project's major objectives: to provide better information in a coordinated way so as to reduce college costs. Specific results are described in other project papers and reports.



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The reader will note that we, the project staff, have other responsibilities. Consequently, were it not for the help and assistance of countless others in both Hawaii and California, this effort would be impossible. Unfortunately, space does not permit us to list all these individuals. However, we do want to thank Evelyn Stacey of the state Chancellor's Office and Rich Montori of Monterey Peninsula College for their excellent work, respectively, in typing the manuscript and in preparing the art and printing for this document.

We especially appreciate the support from FIPSE. Receipt of the Fund's grant has set in motion a series of commitments on the part of others whose support (in money and in kind) is essential to the successful completion of this project and the implementation of its results.

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WORKING PAPER EIGHT
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# INFORMATION SYSTEM SUPPORT

## GENERAL

As part of the FIPSE Project, a planning and evaluation component is to be designed, developed, and added to the existing California State Chancellor's Information System. This new information component will serve a variety of purposes and users at both the state and local levels.

The existing state Chancellor's Office Information System collects cross-section data from local community colleges on programs, students, staff, facilities, courses and finance. (See the Appendix for a description of this information system and changes being undertaken in conjunction with the FIPSE Project.) While these data are useful for policy analysis, the system does not automatically generate the kinds of comparative data, projections, longitudinal data, and qualitative assessments that are needed for planning and evaluation. This part of the FIPSE Project will identify cost-effective ways of developing such information for use by local colleges, the Accrediting Commission, and the state Chancellor's Office. An information subsystem and three specific sets of information are to be produced.

The first information set includes those data (primarily quantitative) that currently are gathered and reported to the state by the colleges and districts. These data, in their detailed form, may be used for comparative analyses in institutional self-study and accreditation review. These same data, in more aggregate form, can be used by the state Office in its planning and evaluation work.

A second information set are those data that can be produced and gathered by the college but currently are not reported to the state. These data would serve the same purposes as those in the first set, but would, in many cases, be qualitative, rather than quantitative.

The third information set are those data gathered and constructed largely external to the college: planning projections, community data (needs assessments, census data, etc.), and longitudinal studies.

Coordinated development of dual purpose information should result in significant cost savings to colleges. New analytical models should significantly improve planning and evaluation capabilities particularly for areas like comparative analysis and evaluation of statewide priorities.

To date, six specific FIPSE information efforts have been identified and work is underway on each. These efforts, described below, are:

(1) learner outcomes,
(2) comparative data,
(3) projected needs and programs,
(4) statewide priorities,

(5) census data, and
(6) other data sources.

LEARNER OUTCOMES

Initial work on the FIPSE Project reveals a dearth of specific, useable information on learner outcomes that can be applied to community college planning and evaluation.

In concept, the output or outcomes from community college education can be categorized as current private and public consumption benefits together with long-term private and public investment benefits. These categories, often expressed in terms of additional lifetime earnings and certain societal or collective benefits, are the results of value added to human capital (students) by community college instruction and related "support" services. This added value can be assessed during the student's enrollment by measuring the change (from initial enrollment to completion) in both cognitive and affective attributes of the student.

These internal measures of impact, however, are incomplete. It is also necessary to see if the added value has the impact on the individual and society that is expected. A complete assessment of learner outcomes requires followup study of the effects of education after learners have completed their work. For instance, a community college may be quite good (technically or internally efficient) at preparing paraprofessional medical workers, but not economically efficient because few of the program's graduates find employment. Analogies can be drawn for other community college functions; i.e., transfer, developmental and community education.

Faced with the need for both internal and external measures, researchers often advocate longitudinal studies where students are individually tracked over long periods. A number of such studies have been successfully completed. However, these studies are costly and the results have not always been timely for either policymaking or planning. Results are seldom used to evaluate different instructional strategies or to evaluate the results of similar programs at different institutions. Degree achievement is often the major performance measure. The multitude of objectives sought by community college students requires a more complex set of performance measures.

To address these practical problems and the gaps in both internal and external measures, we propose to explore

(a) adding partial longitudinal capability to the existing student data file (Chancellor's Office Information System) by (1) shifting to term-end, rather than 4th week census and annual, reporting and (2) using a unique identifier for each individual student while enrolled; and

(b) the use of cross-section community surveys which assess in retrospect, the subsequent value of community college education for those who have (haven't) attended a college.

These two approaches, taken together, should be far less costly than a complete longitudinal study.

Approach (a) will require resolution of record privacy problems by the state

Chancellor's Office, an additional annual cost for data processing for the Office, and some one-time start-up costs for community college districts. After the start-up, this approach should be less costly for districts over the long-term than would certain existing annual student data reporting procedures being tested by the Chancellor's Office.

Approach (a) will be funded from existing state and local resources. We propose to fund approach (b) from the FIPSE Project by redirecting and augmenting funds in the project budget.

Approach (b) will involve four related activities:

| ACTIVITY | TIMING |
|---|---|
| STATE-OF-THE-ART PAPER<br>This paper will assess the literature and existing efforts (such as the Kellogg-NCHEMS project) on those survey techniques, questions, and strategies most applicable to the measurement of community college learner outcomes. The product is a discussion paper to serve as background for a symposium (see below) and subsequent efforts. | June, July, August, 1982 |
| SYMPOSIUM<br>This will be a several-day session in which a small group of leading experts from across the country will discuss survey techniques, questions, and strategies most applicable to measurement of community college learner outcomes. Symposium proceedings will be made available. The ideas generated will be used as the basis for subsequent project efforts in dealing with learner outcomes. | November, 1982 |
| DESIGN INSTRUMENT<br>This effort involves the development of survey questions designed to identify and measure the outcomes of community college education. Questions will be designed with a variety of survey approaches in mind. | Feoruary, 1983 to December, 1983 |
| TEST INSTRUMENT<br>The above survey instrument will be tested by four community colleges that will be doing their accreditation self-studies during 1983-84. One or more of these tests will utilize community survey techniques developed in a Needs Assessment project completed by the Chancellor's Office in 1980 with the support of Vocational Education Act funds. Evaluation of these tests will facilitate modification of the survey instrument and identification of useful suurvey techniques for on-going uses by colleges, beginning in 1984. | November, 1983 to July, 1984 |

Resu'ts of the State-of-the-Art paper and the symposium will be disseminated to

community college personnel throughout California and Hawaii in a series of workshops during the Spring 1983. Results of all four activities will be disseminated in California, Hawaii, and through the country during 1984.

COMPARATIVE DATA

The existing Chancellor's Office Information System contains extensive cross-section data in unit record form on students, staff, facilities, programs, and courses along with more aggregate data on finance, institutional profiles, and communities (within districts).

These existing cross-section data, along with other information, can be used on a comparative basis for the conduct of studies that emphasize evaluation and planning. Comparative data, on like practices in similar colleges, provide useful indices that assist in accreditation self-studies and other college evaluations. A consultant with local self-study experience will develop an analytical model that identifies the ways in which existing data can be used to assess college performance (as compared to other colleges) with regard to elements of the ten accrediting standards as well as other relevant indices.

Suggested uses in relation to accrediting standards are shown below:

Standard 1 - Goals and Objectives

1. Compare 1980 census demographic and economic data on the college service area with regional and statewide data to identify trends or potential changes and their implications for college planning.
2. Compare district labor market data with regional and statewide information to determine impact on college objectives.
3. Compare enrollment patterns and student demographics with those of colleges which have service areas with similar demographic and economic characteristics to determine the implications for planning.

Standard 2 - Educational Programs

1. Compare numbers of transfer students and their achievements with those of colleges which have similar service areas.
2. Compare data on teaching load by discipline with similar-type colleges, and with regional and statewide load data.
3. Compare student retention rates with other colleges.
4. Compare data on job placements of students from the college vocational programs with other colleges.
5. Compare types of course offerings and enrollment data with similar colleges.

Standard 3 - Institutional Staff

1. Compare staffing patterns with similar colleges, and with regional and statewide patterns.
2. Compare compensation practices with other colleges.
3. Compare staff demographics with other colleges.
4. Compare budget allocations for professional growth activities.

Standard 4 - Student Services

1. Compare counselor to student ratios with other colleges.
2. Compare data on financial aid recipients with those of colleges which have similar population demographics.
3. Compare data on special groups with those of similar colleges to identify potential need for new services.
4. Compare ethnic data on students and staff with other colleges, and with data on the college service area.
5. Compare retention and achievements of EOPS students.

Standard 5 - Community Services

1. Compare data on community attitudes and participation with those of similar colleges.
2. Compare programs, enrollments and charges in community service classes.
3. Compare staffing and budget for community services.

Standard 6 - Learning Resources

1. Compare data on print and nonprint materials and their use.
2. Compare staffing and budget allocations.
3. Compare allocations for various activities with statewide standards and with allocations in other colleges.

Standard 7 - Physical Resources

1. Compare space allocations for programs and services with state standards and with allocations in other colleges.
2. Compare utility and maintenance costs with similar institutions.
3. Compare budgets for equipment replacement and the purchase of new equipment.

Standard 8 - Financial Resources

1. Compare revenue sources, unit costs for programs and services, and cost trends.
2. Compare operating reserves, including trends.
3. Compare trends in income and expenditures per ADA.

Standards 9 and 10 - Governance and Administration, System Relationships

1. Compare administrative staffing patterns.
2. Compare data on changes in board membership.

PROJECTED NEEDS AND PROGRAMS

A model for use by community colleges in projecting future conditions and the implied need for college programs and services will be designed and developed, using data illustrative of several regions in the state.

This planning model assumes that both societal needs and individual preferences are basic factors in assessing relevant future conditions. Consequently, plans

for college development should be oriented to expected future trends in (a) demographics, (b) societal conditions, (c) employment opportunities, (d) community interests, (e) plans of other organizations offering similar education, and (f) resulting levels and patterns of student demand.

Expected future trends in factors (a) through (e) can be projected using a variety of techniques and data sources. Among these sources are the 1980 census, data published by the Employment Development Department (EDD), and statewide data on college-going preferences collected by the Field Research Corporation in 1979. (The Field data were collected in conjunction with a Chancellor's Office Needs Assessment project. This project also produced a Needs Assessment Handbook which can be of use to colleges in determining short-term community preferences.)

Future trends in factor (f), the level and pattern of student demand, are a function of future institutional policies and relative costs as well as the other factors. Historic casual relationships influencing student demand will be identified for use in developing this phase of the model.

Trends in the six factors will be projected for 1985 and 1990. Next, a panel of community college planners will assess the implications of these projections for future college programs and services in each of several regions of the state. A variety of techniques will be used at this stage of model development, including the Delphi method and other forms of consensus building. From this work, statements of the likely character of need for community college programs and services will be developed for 1985 and 1990 in the several regions selected.

Projections are scheduled for completion by November 1982. The planning panel will be convenened in January 1983. The results of this effort and the procedures used to obtain these results (the planning model) will be disseminated in California and Hawaii workshops during the Spring 1983 and more widely following that time.

## STATEWIDE PRIORITIES

At present, there are a multitude of state-level priorities for community college operations implicit in statute, regulations, and other legislative and executive pronouncements. Aside from rather general Board of Governors' goals, however, there is no one explicit or manageable set of statewide priorities against which community college operations may be evaluated and planned.

This effort would involve, first, the development of a limited number of statewide priorities for California community colleges. These priorities should be more specific than the 11 Board of Governors' goals, but not be objectives in the classic sense. That is, priorities should not necessarily be feasible or resource-constrained and, depending upon their specificity, they may not be time-constrained either. An initial set of statewide priorities would be endorsed by the Board after consultation with both state and local authorities.

A second part of this effort involves developing guidelines to be used by colleges in assessing their achievement of priorities. This set of guidelines may be added to the accrediting self-study kit and become a part of the self-

study. Colleges undergoing self-study would address these priorities in addition to the accrediting standards. Achievement (or lack thereof) of a statewide priority would not bear upon a college's accreditation. Rather, these 20 (or so) college priority assessments would be aggregated each year without identifying specific colleges. Together with other evidence, this aggregation would be used by the Board of Governors and Chancellor's Office to make a comprehensive evaluation of the statewide achievement of community college priorities. This evaluation forms the basis as well for comprehensive planning by the Board and Chancellor's Office.

Thus, the priorities form a structure by which evaluation can then lead to more, fewer, but in any case modified (more specific, time-constrained, measureable, etc.) priorities. This exercise in reviewing priorities and assessing their feasibility will move colleges and the state Board into a planning mode in which long-term policies can be proposed and debated.

Initial priorities are scheduled for Board of Governors' endorsement by December 1982, following an extensive review by principal policymakers at both state and local levels. This timing would allow those colleges doing accreditation self-studies during 1982-83 to incorporate assessment of the statewide priorities into their work. Accreditation visits to these colleges are scheduled for 1983-84. Under this schedule, a first comprehensive evaluation can be completed in the Spring 1984.

CENSUS DATA

This effort is a two-part analysis to determine how 1980 Census data may be used in community college evaluation and planning.

The first part of this effort, already underway, is an analysis of how the 1980 Census questions may be applied to problems such as the evaluation of statewide priorities, comparative analyses by colleges, and projections of student demand. This work also will review the timing and means by which Census data may be obtained. At present, data for age, sex, race and ethnicity, and housing are available. Data on income and other factors, now included in Summary Tape File 3, will not be available until December 1982. Data can be obtained from several storage locations in California depending upon the kind of information sought.

The second part of this effort is to update the needed Census tract:district mapping. Census tracts for 1970 were identified with the community college districts that existed in 1970. Due to revisions in some tracts and some districts, this mapping must be corrected. This work will require about six months of (one FTE) staff time. Once completed, the mapping will facilitate the aggregation of Census data by district or by any other service area relevant to a particular college.

There also is a need to solve problems of Census data suppression in cases of sparsely populated areas. Data for tracts are routinely suppressed in instances where individuals might be identified. This is particularly troublesome for small district and small college attempts to aggregate tract data.

Work on the possible uses of Census data has begun and is scheduled for completion in July 1982. The update of Census tract:district mapping and



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related activities will begin in August 1982 and be completed by December 1982.

OTHER DATA SOURCES

A variety of other data sources (primarily ad hoc studies) are to be analyzed for their use in community college evaluation and planning.

Among the first sources to be examined are:

(a) the Statewide Longitudinal Survey (SLS), a two-year (Fall 1978 to Spring 1980) longitudinal review of 7,200 students in a stratified sample of 15 colleges, managed by a consortium under VEA funding;

(b) the Student Resources Survey (SRS), a cross-section survey of 1,083 students in a stratified sample of 21 colleges, conducted by the College Board and the Chancellor's Office during December 1978;

(c) the Student Economics and Resources Survey (SEARS), a cross-section sample of 6,100 students drawn from 103 colleges, conducted by the College Board, Chancellor's Office, and Student Aid Commission between January and March, 1980.

Like the Census data, various surveys and other data sources will be reviewed for their use in such activities as assessing statewide priorities, performing comparative analyses for college self-studies, and various projections.

APPENDIX

Board of Governors of the
California Community Colleges
September 16-17, 1982

Title: Information System Plan

Staff Presentation: Chuck McIntyre
Director of Analytical Studies


Summary

This Plan is presented for initial review and discussion by the Board, after which further work will take place in consultation with both state and local personnel. Following this work, the Board will be asked to conduct a final review for endorsement of the Plan in December 1982. Board endorsement of the Plan will allow staff to proceed to obtain the necessary resources to implement the proposed system.

The Chancellor's Office Information System has evolved, since 1974, into a group of eight files for which data are collected, stored, accessed, and used by electronic data processing techniques. These files contain current and historic cross-section data in unit record form for students, staff, programs, courses, and facilities and more aggregate data on finance, institutions, and communities. Data are processed both at the state's Teale Data Center and in the Chancellor's Office using a Four-Phase System (linked to Teale) with four terminals, a disc storage device, and a printer.

The Information System now needs to be (1) refined, (2) augmented by information for planning and evaluation, and (3) used more intensively for policy analysis, management, and operations. This Plan addresses these new developments and their implementation over the next four years. While developments should enhance policymaking, they are not intended to change either the locus (i.e., state versus local) of policymaking or the specific conduct of policymaking.

The Plan will propose major changes in the collection and use of information. These changes will require adjustments by districts that should, after initial start-up costs, reduce costs over the long term. Changes also will require added on-going expenditures for the Chancellor's Office. Federal funds (through the FIPSE Project) will defray part of the cost for planning and evaluation information. State funds will be proposed to carry out the balance of the Plan.

# INFORMATION SYSTEM PLAN

## BACKGROUND

The need and basic design for a comprehensive information system within the Chancellor's Office were endorsed by the Board of Governors in 1974. When efforts to secure funding for the original three-year design in 1975-76 were unsuccessful the project was redesigned to span at least five years and project funding secured in 1976-77.

Project design specified that operational, as well as planning and analytical activities of the Chancellor's Office be supported by this information system. Since its inception, project staff have been organized as part of the Analytical Studies Unit within the Chancellor's Office.

## SCOPE

The information system will ultimately include integrated data files in eight categories for use in both state and local decision-making. Systems files will contain information on (1) students, (2) courses, (3) programs, (4) facilities, (5) finance, (6) staff, (7) institution profiles, and (8) community. Except for the financial, institution, and community each data file consists of unit records, each unit record containing standard basic data elements relevant to that file. Student data, for example, are submitted in the form of one record for each student at a college containing those characteristics such as age, race, sex, residence, class load, and the like, which pertain to that individual.

The information system is a part of the Chancellor's Office total information environment. When the information system project was initiated, the automated Space Inventory system, developed by Facilties Planning, and other annual reporting systems and ad hoc surveys were already in existence. One major objective of the information system project is to develop automated procedures to coordinate, integrate, replace and/or eliminate as many of these separate reporting procedures as possible. It is recognized, however, that not all information needs of the Chancellor's Office can be satisfied by the information system. The need for ad hoc surveys and some annual reports will continue. As resources and time permit, information system data will be used to replace and/or eliminate as many surveys and reports as possible.

## CONCEPTUAL DESIGN AND PHILOSOPHY

Unit record and data element concepts were selected for the system because of their simplicity and flexibility. These two basic concepts provide for multiple use of data, simplify reporting by reducing redundancy and duplication in data collection, stabilize reporting by

reducing annual changes, and make sharing of transportable computer programs a practical reality. The number of data elements maintained for each unit record are held to an absolute minimum.

Data reporting by districts is less burdensome than under past procedures where reports were constructed in their final form at the district level. Changes in data requirements are easier to make on data elements and unit records than on report formats. Reports are generated at the state-level from data elements reported and submitted back to the districts for verification. Chancellor's Office also is assuming responsiblity to develop and maintain computer programs for many required state and federal reports.

Two basic ground-rules have been observed from the beginning of the project. First, no district would be required to fundamentally change its existing information system. Second, to the degree that resources permit, the state-level system is designed to accomodate submission of data on any medium, whether it be hard copy, cards, magnetic tape, or teleprocessing.

STATE/LOCAL IMPACT

As noted, the information system does not require districts to change their systems and allows for submission of data on several types of media. Despite these ground-rules, introduction of the state-level system may require significant one-time local investment and involve changes to the systems of certain districts. The specific character of these changes, however, may be determined locally and possible added initial costs should be compensated by later savings.

More complete and valid data together with more efficient data processing capability could result in at least two significant, but compensating, influences on the balance of state and local prerogatives. On the one hand, these conditions provide the basis for a more vigorous state role and greater state-level controls which, if implemented, would reduce local prerogatives. On the other hand, these conditions should reduce the arbitrary element (arising from poor information) in state-level decisions, thereby strengthening local prerogatives. In short, the overall impact upon state and local decision-making is not entirely certain. In any event, care must be taken to ensure that changes in the information system do not cause changes in the character of decision-making. The latter should be determined by other considerations of a policy nature. The information system is simply a tool for decision-making and should not dictate the way in which decisions are made or who makes these decisions.

RELATIONSHIP TO OTHER SYSTEMS

Board policy calls for the Chancellor's Office to provide the focus for gathering data from districts and disseminating these data to other

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local, state, and federal agencies. Concentrating data gathering through the Chancellor's Office information system simplifies the numerous data reporting requirements faced by districts. Therefore, it's essential that this system be linked in the appropriate fashion with other federal and state data systems to avoid confusion and duplication of effort.

Other data systems of primary concern are (a) federal reporting requirements, including the Higher Education General Information Survey administered by CPEC; (b) data collected by the California Postsecondary Education Commission (CPEC) information system; (c) student data for enrollment projections made by the State Department of Finance enrollment projection model, and (d) occupational education, including federal reporting requirements from the 1976 VEA and the supply component of the California Occupational Information System (formerly the California Manpower Management Information System). Continuing efforts identify and implement ways of effectively coordinating the Chancellor's Office system with each of these systems.

The general relationship of the Chancellor's Office information system to district information systems is defined gradually as each file of the state-level system is implemented. Of particular importance, however, are those districts that lack automated and/or general information system capability. The need for uniform statewide reporting may place an unexpected burden upon such districts. These problems are dealt with individually as they occur.

## CURRENT STATUS

Mapping 1980 census data to community college districts will complete the development phase for the eight basic data files
Priorities now shift to operations and maintenance, improving the quality of data, achieving 100% reporting, and direct use of data in management, planning, policy analysis, and evaluation activities. The quality of data will naturally improve as each system matures and local districts see demonstrated uses of data that have direct impact upon them. Improving the level of reporting will not occur without some basic changes in the relationship of the Chancellor's Office and local community colleges, however.

The Information System's success to date has been achieved through voluntary compliance with reporting requirements. To the extent that community college personnel perceived some benefits and/or lessening of reporting burdens inherent in the unit record systems, they have actively cooperated in the design and implementation of reporting procedures and have voluntarily complied with reporting requirements. Staff has been very successful in getting all districts to report unit record data. However, there has been less success in getting 100% compliance with reporting requirements. Complete reporting for noncredit students and courses continues to be a problem. A number of districts still do not report unit record data on noncredit students and courses.

As the fiscal impact of Proposition 13 increases for community colleges and current economic conditions continue, state and federal reporting becomes an increasing burden. Local districts are forced to prioritize their resources and there is increasing evidence that nonmandated reporting is assigned a lower priority. It will be very difficult to get local districts to continue to invest in the development of new automated systems for nonmandated reporting. As a result, improvements in noncredit student and course reporting do not appear likely nor is there likely to be the same degree of voluntary cooperation as in the past.

## NEXT STEPS (THE PLAN)

### MANDATES AND SANCTIONS

Reporting requirements must be directly or indirectly mandated with reasonable sanctions for noncompliance. Continued reliance on voluntary reporting will result in reduced quality of data and level of compliance as fiscal constraints continue to erode district's ability, or willingness, to respond to nonmandated reporting requirements. This will in turn decrease our ability to respond to inquiries from the legislature and control agencies and increase their criticism of our ability to collect required information from our colleges. If this situation is allowed to continue, we can expect gradual loss of administrative authority as state control agencies and the legislature seek compliance to information requests through legislation and/or budget control language.

To mandate data reporting with unrelated fiscal sanctions for noncompliance seems heavy handed and arbitrary. Usefullness of mandated data must be demonstrable and sanctions for noncompliance should be directly related to the act of noncompliance. It would be better to indirectly mandate data reporting through use of reported data in agency operations that provide services or financial support directly to college districts. Withholding service or financial support for noncompliance to reporting would then relate sanctions directly to the data required. For example, student data would be used in the general fund apportionment process and course data in the program/course approval procedures.

### APPLICATIONS

To make data reporting more palatable for colleges, we propose that data collected not only provide requested information to the Legislature and CPEC, and meet all required state and federal reporting but also are directly applied to those mandated functions of the Board of Governors and Chancellor's Office that provide a service or provide financial support to local districts.

## MANAGEMENT AND OPERATION

One of the primary responsiblities of the Chancellor's Office is the administration of state general fund apportionment and allocation of categorical funds (EOPS, HSPS, VOC. ED.). Separate reporting procedures are currently used to collect data from colleges to support apportionments and allocation procedures. The data required for allocation and apportionment formulas are reported by colleges through information systems data reporting on contact hours and enrollment. These separate reporting procedures could be replaced with a single integrated reporting system.

We are now prepared to take this step. With the passage of recent legislation (AB 1149) requiring changes in attendance accounting, increasing emphasis on accountability, and the issue of state support for instructional activity, it is time proceed with this next phase of the information systems project. We recommend that all of the separate reporting required for general fund apportionment and categorical fund allocations be discontinued and replaced by a single integrated student and course reporting system.

## PLANNING, POLICY ANALYSIS, AND EVALUATION

The existing Information System collects cross-section data on programs, students, courses and finance. While these data are useful for policy analysis, the system does not automatically generate the kinds of comparative data, projections, logitudinal data, and qualitative assessments that are needed for planning and evaluation. Data are needed to assess student motivation, performance, education progress and outcome. The student and course reporting system proposed above can also be structured to provide information for these purposes. In addition, the joint project of the Chancellor's Office and the Accrediting Commission, supported by the Federal Fund for Improvement of Postsecondary Education (FIPSE), will identify cost-effective ways of securing and using such information.

## REFINEMENTS

Effective application of information system data to Chancellor's Office operations will require technical, organizational, policy, and budgetary changes. Several data elements will require refinement, new data elements will be required, and timing of data reporting must be revised to allow computation of attendance and assessment of student intent, progress and performance. Successful integration of information systems data and activities into Chancellor's Office line operations will require careful delineation and agreement of unit responsibilities. Additional staff and operating funds will be necessary to collect, process, and integrate information systems data into Chancellor's Office operations in an

effective and timely manner. Finally, to assure compliance with reporting requirements and reliability of data reported, Title 5 regulations should specify use of information systems data for mandated functions of the Chancellor's Office, and reasonable sanctions for noncompliance must also be instituted that relate directly to reporting requirements.

Technical Changes

Successful application of information systems data to Chancellor's Office line operations will require the following technical changes:

1. Discontinue annual and winter/spring first census week student data reporting. In their place institute term end student data reporting with the following changes;

   a. Require a unique but anonymous record number, to be assigned by the college district, for each student enrolled to permit longitudinal tracking of students through the institution;

   b. Require section identifier, units (if credit class), contact or attendance hours, and completion status for each class in which the student is enrolled; and

   c. Require academic standing, grade point average (GPA), and educational outcome for each student.

2. Remove financial aid data elements from EOPS student data record, implement a separate student financial aid reporting procedure and require financial aid data for all financial aid students.

3. Expand the Student Accountability Model (SAM) to include nonvocational instructional programs, refine and require reporting of student declared educational goal, implement a student program analysis process (modeled after SAM) in the Chancellor's Office, and discontinue vocational educational student data reporting for college districts.

4. Require term end rather than annual reporting of EOPS and Handicapped student data.

5. Add course classification data elements to the Course Activity Measures (CAM) data system.

Organizational Changes

Reliance of Chancellor's Office line operations on information systems data will require thoughtful delineation of responsibilities and close coordination of unit priorities and resources. To date, line units and

the information systems project have functioned independently and coordination of activities was not necessary. However, this situation will change dramatically under the new proposed procedures.

Under current practices, line units have direct control over data collection and processing validation since data are reported directly to them from the responsible unit in the local college district. Followup for data errors and noncompliance naturally flow from this process and questions of responsibility and priority are never at issue. However, under the proposed system, this traditional flow of data will be modified at the state level and possibly at the local level. Data will not flow directly from the responsible local unit to a line unit within the Chancellor's Office. The proposed automated system will require that data flow through a third party, in this case data processing, and be processed before data are useable by the line unit. Without careful planning, third party involvement can lead to questions about responsibilities and priorities.

Under the proposed system, only the responsibility for physical receipt and processing of data into a useable format are being transferred to the information system. Administration of reporting requirements and schedules, reporting, compliance, verification of reported data, and followup responsibilities remain with the line unit. Conversely, the information system must guarantee timely processing of data, availability and access to useable information, and technical assistance.

Of equal importance is the provision of adequate staff and resources to provide a level of information service that will guarantee access to information for all agency units. Present staffing and funding is sufficient only for maintenance and operation of data processing systems currently in place. Effective integration of information systems into the management, operation, planning and evaluation functions of the Chancellor's Office will require additional staff and resources to provide service and assistance to line units. EDP equipment will need to be upgraded to allow hands-on access to information systems data and data processing facilities by Chancellor's Office staff. Only by providing service and assistance, and allowing staff hands-on access will data processing be a useful tool.

CHANCELLOR'S OFFICE
INFORMATION SYSTEMS FILES
STATUS OF FILES AND REPORTING
PHASE I

April 1983

| DATA FILES | STATUS | NUMBER OF DISTRICTS REPORTING | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 1976-77 | 1977-78 | 1978-79 | 1979-80 | 1980-81 | 1981-82 | 1982-83 |
| 1. Student Data | | | | | | | | |
| .First Census Enrollment | oper | | 59 | 64 | 67 | 67 | 70 | 70 |
| .Vocational Student Enrollment | oper | | | | 16 | 32 | 32 | |
| .EOP&S Student Data | oper | | | | | 65 | | |
| .HSP&S Student Data | 1st yr | | | | | | | |
| 2. Staff Data | oper | | | | | | 69 | 70 |
| 3. Course Data | | | | | | | | |
| .Course Activity Measures | oper | 26 | 46 | 65 | 66 | 67 | 68 | |
| .Noncredit Inventory | oper | | | | | | | |
| .Independent Studies Inventory | oper | | | | | | | |
| 4. Program Inventory | oper | | 70 | 70 | 70 | 70 | 70 | 70 |
| 5. Facilities Data | | | | | | | | |
| .Space Inventory | oper | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| .Off-Campus Facilities | study | | | | | | | |
| 6. Financial Data | | | | | | | | |
| .Apportionment Data | oper | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| .Income and Expenditure Data | oper | | | 70 | 70 | 70 | 70 | |
| .Expenditures by Activity | oper | | | | 70 | 70 | 70 | |
| 7. Community Data | develop | | | | | | | |
| 8. District/College Profiles | | | | | | | | |
| .Students | oper | | | 70 | 70 | 70 | 70 | 70 |
| .Staff | oper | | | | | | 70 | 70 |
| .Courses | develop | | | | | | | |
| 9. Policy and Legal Codes | | | | | | | | |
| .State Education Code | discontinued | | | | | | | |
| .Administrative Code | discontinued | | | | | | | |
| .Board Policy | study | | | | | | | |

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# CHANCELLOR'S OFFICE
# INFORMATION SYSTEMS FILES



| DATA ELEMENTS | ELEMENT NO. |
|---|---|
| **GLOBAL DATA ELEMENTS** | |
| COLLEGE CODE | X1 |
| DISTRICT CODE | X2 |
| RECORD NUMBER | X3 |
| REPORT PERIOD | X4 |
| TAXONOMY OF PROGRAMS CODE (TOP) | X5 |
| USOE CODE | X6 |
| **CENSUS STUDENT DATA ELEMENTS** | |
| BIRTHDATE | S01 |
| CITIZENSHIP CODE | S02 |
| COLLEGE OF LAST ATTENDANCE | S03 |
| ENROLLMENT STATUS | S04 |
| HIGH SCHOOL EDUCATION | S05 |
| HIGH SCHOOL OF GRADUATION OR LAST ATTENDANCE | S06 |
| POSITIVE ATTENDANCE ENROLLMENT | S07 |
| RACIAL AND ETHNIC CODE | S08 |
| RESIDENCE CODE | S09 |
| SEX | S10 |
| STUDENT-DECLARED MAJOR | S11 |
| STUDENT GOAL | S12 |
| STUDENT LEVEL | S13 |
| TOTAL POTENTIAL HOURS OF ATTENDANCE (TPHA) | S14 |
| UNITS ATTEMPTED | S15 |
| VETERAN'S AID STATUS | S16 |
| WEEKLY STUDENT CONTACT HOURS (WSCH) | S17 |
| **COMPUTED STUDENT DATA ELEMENTS** | |
| AGE | SE1 |
| CREDIT/NONCREDIT STATUS | SE2 |
| ENROLLMENT PATTERN | SE3 |
| FULL-TIME/PART-TIME STATUS | SE4 |
| ITV STATUS | SE5 |
| RESIDENCE STATUS | SE6 |
| TOTAL UNITS ATTEMPTED | SE7 |
| **VOCATIONAL STUDENT DATA ELEMENTS** | |
| COOPERATIVE EDUCATION STATUS | V01 |
| CONSUMER HOMEMAKING EDUCATION PROGRAM CODE | V02 |
| INSTRUCTIONAL SETTING, ACADEMICALLY DISADVANTAGED | V03 |
| INSTRUCTIONAL SETTING, ECONOMICALLY DISADVANTAGED | V04 |
| INSTRUCTIONAL SETTING, HANDICAPPED STUDENT | V05 |
| INSTRUCTIONAL SETTING, LIMITED ENGLISH PROFICIENCY | V06 |
| SAM COMPLETION STATUS | V07 |
| SAM STUDENT MAJOR CLASSIFICATION | V08 |
| SAM VOCATIONAL PROGRAM CODE | V09 |
| VEA FUNDING FOR DISADVANTAGED STUDENT | V10 |

## EOPS STUDENT DATA ELEMENTS

| | |
|---|---|
| ACADEMIC STANDING, BEGINNING | E01 |
| ACADEMIC STANDING, END | E02 |
| CAL GRANT B | E03 |
| COUNSELING HOURS | E04 |
| CUMULATIVE GPA | E05 |
| EOPS GRANT | E06 |
| EOPS STATUS | E07 |
| EOPS WORK-STUDY MONEY EARNED | E08 |
| GPA FOR ACADEMIC YEAR | E09 |
| NATIONAL DIRECT STUDENT LOAN (NDSL) | E10 |
| NON-EOPS WORK-STUDY MONEY EARNED | E11 |
| OTHER FINANCIAL AID | E12 |
| PELL GRANT | E13 |
| PELL GRANT ELIGIBILITY STATUS | E14 |
| SCHOLARSHIP | E15 |
| SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT (SEOG) | E16 |
| TOTAL FINANCIAL NEED | E17 |
| TOTAL WORK-STUDY HOURS WORKED | E18 |
| TUTORIAL HOURS | E19 |
| UNIT COMPLETED | E20 |

## HANDICAPPED STUDENT DATA ELEMENTS

| | |
|---|---|
| AGE AT ONSET | H1 |
| DEPARTMENT OF REHABILITATION CLIENT | H2 |
| DISABILITY AND SERVICE CLASSIFICATION | H3 |
| FINANCIAL AID STATUS | H4 |
| HSPS STATUS | H5 |
| INSTRUCTIONAL SETTING | H6 |
| INSTRUCTIONAL SETTING, OFF CAMPUS | H7 |
| SERVICES REQUESTED OR USED | H8 |
| UNITS COMPLETED | H9 |

| DATA ELEMENTS | ELEMENT NO. |
|---|---|
| **STAFF DATA ELEMENTS** | |
| ACTUAL ANNUAL SALARY, PRECEDING YEAR | SF01 |
| ADDITIONAL TIME ON CAMPUS | SF02 |
| ANNUAL SALARY | SF03 |
| ANNUAL STIPEND | SF04 |
| ASSIGNMENT FTE | SF05 |
| AVERAGE HOURLY EQUIVALENT COMPENSATION | SF06 |
| AVERAGE HOURLY EQUIVALENT COMPENSATION, CERTIFICATED ASSIGNMENT FOR CLASSIFIED EMPLOYEE | SF07 |
| AVERAGE HOURLY OVERLOAD COMPENSATION | SF08 |
| EEO-6 OCCUPATIONAL ACTIVITY | SF09 |
| EMPLOYEE CODE | SF10 |
| EMPLOYMENT CLASSIFICATION | SF11 |
| EMPLOYMENT STATUS | SF12 |
| FUNDING SOURCE | SF13 |
| MONTHS OF EMPLOYMENT | SF14 |
| RACIAL & ETHNIC BACKGROUND | SF15 |
| REQUIRED OFFICE HOURS | SF16 |
| SEX | SF17 |
| TOP OR CSS CODE | SF18 |
| TYPE ASSIGNMENT | SF19 |
| VEA ASSIGNMENT | SF20 |
| WEEKLY HOURS | SF21 |
| YEAR OF BIRTH | SF22 |
| **COURSE ACTIVITY DATA ELEMENTS** | |
| ACTIVE ENROLLMENT-FIRST CENSUS | C01 |
| ACTIVE ENROLLMENT-SECOND CENSUS | C02 |
| COURSE IDENTIFIER | C03 |
| CREDIT-NONCREDIT | C04 |
| DAY-EVENING CLASS CODE | C05 |
| METHOD OF INSTRUCTION | C06 |
| SAM PRIORITY CODE | C07 |
| SECTION DATE-BEGINNING | C08 |
| SECTION DATE-ENDING | C09 |
| SECTION ENROLLMENT ACCOUNTING METHOD | C10 |
| SECTION IDENTIFIER | C11 |
| SECITON MEETING DAYS. | C12 |
| SECTION MEETING FACILITY-BUILDING | C13 |
| SECTION MEETING FACILITY-LOCATION | C14 |
| SECTION MEETING FACILITY-ROOM | C15 |
| SECTION MEETING TIME-BEGINNING | C16 |
| SECTION MEETING TIME-ENDING | C17 |
| TOTAL SECTION CONTACT HOURS | C18 |
| TOTAL STUDENT CONTACT HOURS | C19 |
| UNITS OF CREDIT | C20 |

| DATA ELEMENTS | ELEMENT NO. |
|---|---|



NONCREDIT/INDEPENDENT STUDY COURSE INVENTORY

| | |
|---|---|
| APPLICATION DATE | N01 |
| APPROVAL REQUEST | N02 |
| CERTIFICATION CODE | N03 |
| CLASS ROOM HOURS | N04 |
| COURSE ACTIVITY CODE | N05 |
| COURSE OBJECTIVE | N06 |
| COURSE TITLE | N07 |
| DEMONSTRATION OF NEED | N08 |
| METHOD OF INSTRUCTIONS | N09 |
| MINIMUM SESSIONS | N10 |
| PRIMARY METHOD OF COURSE EVALUATION | N11 |
| RAVEC CERTIFICATION | N12 |
| SAM PRIORITY CODE | N13 |
| SPECIAL PROGRAM CODE | N14 |
| TEACHING MATERIALS | N15 |
| TYPE NONCREDIT COURSE | N16 |
| UNITS | N17 |

PROGRAM INVENTORY

| | |
|---|---|
| CONJOINT PROGRAM | P1 |
| DEGREE TYPE | P2 |
| LOCAL PROGRAM TITLE | P3 |
| NONCREDIT PROGRAM | P4 |
| OCCUPATIONAL PROGRAM | P5 |
| UNITS REQUIRED FOR DEGREE | P6 |
| YEAR APPROVED | P7 |
| YEAR DELETED | P8 |
| YEAR OPERATIONAL | P9 |

FACILITIES INVENTORY

| | |
|---|---|
| ASSIGNABLE SPACE, ROOM | F01 |
| A-Z PRORATION CODE | F02 |
| BUILDING NAME | F03 |
| BUILDING NAME ABBREVEATION | F04 |
| BUILDING NUMBER | F05 |
| CONDITION CODE | F06 |
| CONSTRUCTION TYPE | F07 |
| DEPARTMENT CODE | F08 |
| GROSS SQ. FT., BUILDING | F09 |
| LOCATION CODE | F10 |
| MASTER PLAN TYPE | F11 |
| NUMBER OF ASSIGNABLE STATIONS | F12 |
| OWNERSHIP CODE | F13 |
| ROOM NUMBER | F14 |
| ROOM USE CODE | F15 |
| TOP OR CSS CODE | F16 |
| YEAR OF CONSTRUCTION | F17 |
| YEAR OF LAST MAJOR ADDITION | F18 |

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